

clypeal point on the pupa permitted it to partly bore out of the stem and thus release the imago, which had no homologous point, but an unarmed head. In some borers the larva prepared a little door which the imago easily pushed open, the pupa remaining inactive within its prison; while in others, closely related, the pupa did the work by forcing itself partly out. There could be no question of the digoneutic nature of *Arsame obliquata* at Washington, and none as to its variability as illustrated by his specimens, *vulnifica* and *melanopyga*, being doubtless but forms of it.

Some specimens of *Cantharis Nuttali* were exhibited by Prof. Riley, it being stated that in Dakota they were accused of devouring the growing wheat.

The meeting then adjourned, when the members spent some time in informal conversation and in examining the microscopic specimens illustrating Prof. Osborn's paper.

OBITUARY NOTICES.

PROF. P. C. ZELLER.

The death of this veteran lepidopterist has occurred, long expected and deeply regretted. Seven years younger than the century itself, Prof. Zeller was born on the 9th of April, 1808. Professor in the Prussian Real Schule at Meseritz, he was finally retired on a Government pension, and has lived since 1870 near Stettin, continuing his entomological labors in connection with the Entomological Society of Stettin. Commencing to write at an early age, Prof. Zeller has grown up with the modern science of lepidopterology. His earliest studies were upon the collections of Frau Lienig and the material brought by himself from a southern trip, which extended as far as Sicily. Zeller discovered the curious diurnal *Rhodocera Farinosa*, besides describing certain *Lycenidae*, but his principal attention was given to the small moths of the families *Pyrallidae* to *Tineidae*, the modern classification of which he may be said to have founded. He first cleared up the confusion as to the genera of *Phycidae*, and by using natural characters, chiefly secondary sexual ones, he succeeded in disentangling our minds with regard to the order of nature in this obscure and neglected field of inquiry. His species and genera are very numerous and almost always valid. It is a misfortune that his valuable monograph on the

Crambida was issued so nearly simultaneously with the worthless writings of Francis Walker on the same subject, so that some of our North American material has been twice named. The evidence seems to be that Zeller's paper may have been earlier. As a matter of justice it should have priority. In a series of articles, published since retirement from official duties, Prof. Zeller described a number of moths from North America. Rather more than the, unfortunately not to be avoided, proportion of synonyms mark the papers, which are otherwise models of what descriptive work ought to be. Still later, Prof. Zeller has published a beautifully illustrated volume on microlepidoptera, and has given a classification of *Chilo*. As I remember him, in 1867, Prof. Zeller was a white-haired gentleman of very kind manners and enthusiastic for his favorite science. He was moderately thin and tall, wearing a slight whisker, but otherwise with clean shaven mouth and face. His nose was large and well-shapen, his eyes bright and the whole expression of his face pleasing. He had high cheek bones, and his countenance was unmistakably German in its salient features. Loew, the celebrated dipterist, was then living in Meseritz, and an entomological excursion which I made with these two celebrities is among the most pleasant of my European reminiscences. Prof. Zeller's home relations were of the happiest, and the sympathy of an amiable and considerate wife was his through life. And it was a life devoted to science and learning. His accomplishments as a linguist and teacher were well known and appreciated in Germany. We know him chiefly as a biologist, the describer of the exterior structure of lepidoptera. He was fortunate enough to avoid much of the controversial spirit which accompanies descriptive entomology. Although he felt deeply the uselessness of the British Museum Lists and his own studies were impeded thereby, he has, on the whole, little to say in criticism of others. He was not only charitable, but had schooled all natural irritability. His assistance was freely given to others, and Mr. Stainton's work on the *Tineina* acknowledges its value. He was a type of a kindly German pedagogue and naturalist which hardly exists elsewhere.

A. R. G. in *Papilio*.

CHARLES ARNOLD,

of Paris, Ontario, died after a short illness on the 15th day of April, 1883. Although not an active worker in the Entomological field, he was a close observer of the habits of insects, especially such as are injurious to agri-

culture and horticulture, and in this way a most useful member of our Society. He was quiet and unobtrusive, but his work, especially as a hybridist, made him widely known. He originated many good varieties of fruits, cereals and other useful plants, some of which are much appreciated. Few men have done so much good in so quiet a way.

PROF. TOWNEND GLOVER,

long so well known as Entomologist of the Department of Agriculture in Washington, died on the 8th of September from an attack of apoplexy, at the house of his adopted daughter in Baltimore, in his 71st year. He was a most careful and painstaking observer, a good draughtsman and an excellent engraver, and employed his every spare moment in producing figures of American insects. In the preparation of these plates his industry was incessant, and the wonder is how, in one short life, he could have accomplished so much. The plates, with the accompanying notes, have been purchased by the United States Government, and it is hoped that they will be published in sufficient number to admit of their being available to educational institutions and students of Entomology throughout the country. A complete set of his beautiful works, of which only fifteen copies are extant, have been secured for the library of our Society. He was an honorary member of the Entomological Society of Ontario, and ever felt a deep interest in our work.

V. T. CHAMBERS,

A valued contributor to the pages of the CANADIAN ENTOMOLOGIST, died on the 7th of August, his fifty-second birthday, at his home in Covington, Kentucky. He labored long and ardently on the Micro-Lepidoptera, and in his numerous descriptions of species and careful notes on their habits, has left behind him an enduring monument. He began a series of papers on Micros in the third volume of our journal, published in 1871, publishing ten papers before the end of that year. These were followed by twelve papers in volume 4, nine in vol. 5, ten in vol. 6, nine in vol. 7, seven in vol. 8, ten in vol. 9, four in vol. 10, four in vol. 11, one in vol. 12, two in vol. 13, and one in vol. 14, seventy-eight papers in all, besides a few communications on other Entomological subjects. His writings have added much to the interest and value of our journal, and we shall miss him much.

DR. JAMES S. BAILEY,

Of Albany, N. Y., died at his residence, No. 95 Eagle St., on July 1st, after a protracted illness. He was an enthusiastic student of insects, who devoted most of his attention to the Lepidoptera, of which he possessed a fine collection. He has contributed a number of papers to the ENTOMOLOGIST, among others an illustrated one on the natural history of *Cossus Centerensis*, in No. I., vol. 11, and at the time of his death was engaged in preparing a paper on the tree-boring species of this genus for the Department of Agriculture.

CORRESPONDENCE.

Dear Sir,—While on a visit to the neighborhood of Brantford for a couple of weeks in the latter part of July, I came upon an elm stump with the bark curled loosely round it. On pulling back the bark I saw a *Calopteron reticulatum* fresh and bright. The form, with the front part of the wing covers, all yellow; the hind part, blue black. There was also one just emerged. It was a chalky white all over; the front part with a yellowish tinge, the hind part with a bluish tinge. On examining the stump and inside the bark I found clusters of pupæ, remarkable in the regular formation of the cluster. The pupæ were in straight rows, close, side by side, the row above half lapped over the row below it, each pupa of the upper row placed exactly between the two below it. One cluster was formed thus:—The lower row four; the second row four, one projecting to the left; the third row three; the fourth row two; the fifth row two, one projecting to the right. Another cluster had four in the lower row; five in the second, two projecting to the left; four in the third; three in the fourth, and finished there. Then there were twos and threes in different places, with one by itself. I visited them often to watch their appearance. Sluggishness seemed to be their principal characteristic. Slow in withdrawing from the pupa case; slow in obtaining color and consistency, and slow to go off on the wing. True, the weather was cool and showery, which would tend to increase their slowness. They did not come out in order of time according to the rows, but came from the upper and lower ones indiscriminately; but every one of them was the same